

In the Claims:

Please cancel claim 1, without prejudice, and add new claims as follows:

1. (Canceled)
2. (New) An optical circuit, comprising:
an input for inputting a first input signal at a first wavelength and a second input signal at a second wavelength;
an output for outputting an output signal;
a first circulator including an input port coupled to the input, an output port coupled to the output, and an intermediate port coupled to a first end of a first selective reflection circuit, the first selective reflection circuit configured to reflect the first input signal and transmit the second input signal; and
a second circulator including a first port coupled to a second end of the first selective reflection circuit, a second port coupled to a demultiplexer, and a third port coupled to a multiplexer, wherein the demultiplexer is configured to separate the second input signal into an optical path having an optical switch, the optical switch having a bar mode transmission state that allows the optical switch to transmit the second input signal to the multiplexer and a cross mode transmission state that allows the optical switch to transmit the second input signal to an external output and an additional signal to the multiplexer.
3. (New) The optical circuit of claim 2, further comprising a transmitter coupled to the optical switch, the transmitter configured to generate the additional signal at the second wavelength.
4. (New) The optical circuit of claim 2, wherein the additional signal is at the same wavelength as the second wavelength.
5. (New) The optical circuit of claim 4, wherein the second circulator further includes a fourth port coupled to a second selective reflection circuit, the second selective reflection circuit having selective reflection at the second wavelength and low-reflection termination at wavelengths other than the second wavelength.

6. (New) The optical circuit of claim 2, further comprising an amplifier disposed between and coupled to the multiplexer and the third port of the second circulator.
7. (New) The optical circuit of claim 2, wherein the optical switch is independently controllable.
8. (New) The optical circuit of claim 2, wherein the external output includes a receiver.
9. (New) The optical circuit of claim 2, further comprising an amplifier that couples the input port of the first circulator to the input.
10. (New) The optical circuit of claim 2, further comprising an amplifier that couples the output port of the first circulator to the output.
11. (New) The optical circuit of claim 2, wherein the demultiplexer comprises cascaded wavelength selective splitters.
12. (New) An optical circuit, comprising:
 - a first optical amplifier for a first input signal at a first wavelength and a second input signal at a second wavelength, wherein the first optical amplifier includes a first circuit to selectively drop the second input signal and add a first additional signal, the first circuit comprising:
 - a first circulator including an input port for inputting the first and second input signals, an intermediate port coupled to a first end of a first selective reflection circuit configured to reflect the first input signal and transmit the second input signal, and an output port for outputting the first input signal and selectively outputting either the first additional signal or the second input signal; and
 - a second circulator including a first port coupled to a second end of the first selective reflection circuit, a second port coupled to a demultiplexer, and a third port coupled to a multiplexer, wherein the demultiplexer is configured to separate the second input signal into an optical path having an optical switch, the optical switch controllable to either

transmit the second input signal to the multiplexer or to transmit the second input signal to an external output and the first additional signal to the multiplexer.

13. (New) The optical circuit of claim 12, further comprising a second optical amplifier for a third input signal at a third wavelength and a fourth input signal at a fourth wavelength, the third and fourth input signals propagating in a direction opposite the first and second input signals, wherein the second optical amplifier includes a second circuit analogous to the first circuit to selectively drop the fourth input signal and add a second additional signal.
14. (New) The optical circuit of claim 13, wherein the third and fourth wavelengths are staggered with respect to the first and second wavelengths.
15. (New) The optical circuit of claim 13, wherein the first additional signal is at the same wavelength as the second wavelength and the second additional signal is at the same wavelength as the fourth wavelength.
16. (New) The optical circuit of claim 12, wherein the first additional signal is at the same wavelength as the second wavelength.
17. (New) The optical circuit of claim 16, wherein the second circulator further includes a fourth port coupled to a second selective reflection circuit, the second selective reflection circuit having selective reflection at the second wavelength and low-reflection termination at wavelengths other than the second wavelength.
18. (New) The optical circuit of claim 12, further comprising an amplifier disposed between and coupled to the multiplexer and the third port of the second circulator.
19. (New) The optical circuit of claim 12, wherein the optical switch is independently controllable.
20. (New) The optical circuit of claim 12, wherein the external output includes a receiver.

21. (New) The optical circuit of claim 12, wherein the demultiplexer comprises cascaded wavelength selective splitters.